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10/631,264

07/31/2003

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EXAMINER

WEINTROP, ADAM S

ART UNIT

PAPER NUMBER

2145

MAIL DATE

DELIVERY MODE

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/631,264

Applicant(s)

SHAH ET AL.

Examiner

Adam S. Weintrop

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-2 and 4-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Alam et al. (US 6,324,544 B1) in view of Huang et al. (US 6,477,543).

Regarding **claim 1**, Alam et al. anticipates in a computing sync community, a system for synchronizing one or more replicas in the sync community (Abstract), the system comprising: a computer processor executing a sync runtime module that provides services to one or more sync adapters (column 9, lines 56-67, where the synchronization manager is coupled to sync providers, seen as adaptors since they interface with certain types of file stores, and the synchronization manager provides services to the providers as described in column 10, lines 25-30), wherein the services provided by the sync runtime module to each of the one or more sync adapters include a change enumeration (column 10, lines 25-30, where the synchronization manager provides the providers with methods to notify the manager regarding changes to an object store, seen as change enumeration); and a sync controller that instantiates a particular sync adapter such that the particular sync adapter utilizes the services to

synchronize a first replica in the sync community with a second replica (column 13, lines 57-63, where the user places files and directories in a folder in order to use the synchronization system). Alam et al. does not disclose having the change enumeration service compare a first knowledge of the first replica with a second knowledge of the second replica to enumerate changes, wherein the knowledge of a replica comprises information describing a set of changes that the given replica is aware of. The general concept of having change enumeration occur using information describing a set of changes the replica is aware of is well known in the art as illustrated by Huang et al. Huang et al. teaches synchronization that uses update history information from the replica itself, seen as the replica knowing its changes to enumerate the differences for synchronization (column 14, lines 23-31). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Alam et al. with using the replica's own knowledge of changes to enumerate differences for synchronization as taught by Huang et al. in order to expedite synchronization as noted in Huang et al.'s disclosure in column 14, lines 23-31.

Regarding **claim 2**, Alam et al. and Huang et al. teach the system as defined in claim 1, and Alam et al. further discloses wherein the services provided by the sync runtime module are accessed by the one or more sync adapters using an applications programming interface (column 10, lines 1-8).

Regarding **claim 4**, Alam et al. and Huang et al. teach the system as defined in

claim 1, and Alam et al. further discloses wherein the services further comprises a conflict detection service that uses the first knowledge of the first replica and the second knowledge of the second replica to detect conflicts (column 13, lines 6-19, with a conflict situation arising based on knowledge of the replicas).

Regarding **claim 5**, Alam et al. and Huang et al. teach the system as defined in claim 4, and Alam et al. further discloses wherein the conflict detection service detects a conflict when a change enumerated by the first replica is not in the second knowledge of the second replica and a change enumerated by the second replica is not in the first knowledge of the first replica (column 13, lines 18-19, with a conflict situation arising based on the replicas, and the change is not known to either the first knowledge or second knowledge, equivalent to having the same object changed on both replicas, since the change would not be enumerated and synchronized at both replicas).

Regarding **claim 6**, Alam et al. and Huang et al. teach the system as defined in claim 4, and Alam et al. further discloses wherein the conflict detection service further comprises a conflict resolution module (column 13, lines 18-35, where the conflict is resolved based on a certain method).

Regarding **claim 7**, Alam et al. and Huang et al. teach the system as defined in claim 6, and Alam et al. further discloses, wherein the conflict resolution module can implement a conflict policy identified in a profile or included in a pluggable conflict

resolution module (column 13, lines 18-35, with the conflict resolution being based in either the registry, seen as a profile setting, since it gives the manager instructions on how to proceed, or as a user option, seen as a pluggable resolution, since options are provided to the user and this can change on each conflict).

Regarding **claim 8**, Alam et al. and Huang et al. teach the system as defined in claim 1, and Alam et al. further discloses further comprising a profile that includes one or more parameters, wherein the sync controller configures the particular sync adapter using the one or more parameters in the profile (column 13, lines 19-28, where the user, seen as the sync controller, can configure options to be set in the registry, seen as a profile, the profile as the parameter for conflict resolution, and this resolution policy can configure the sync adapters in the presence of a conflict).

Regarding **claim 9**, Alam et al. and Huang et al. teach the system as defined in claim 8, and Alam et al. further discloses wherein the profile identifies one or more of (a profile is interpreted here as being information that pertains to the synchronization of a replica): a first source folder of the first replica; a first destination folder of the first replica; a second source folder of the second replica; a second destination folder of the second replica (column 11, lines 18-20, with path names being stored for replicas); a first filter to filter changes that are enumerated at the first replica; a second filter to filter changes retrieved from the second replica (column 11, lines 33-37, with time stamp information being used to date the files and filter them by comparing them to each

other); a transformation for converting an item from the second replica to a format of the first replica (column 18, lines 62-67, with format converters being registered in the OS, seen as part of a profile); and a conflict resolution policy (column 13, lines 19-28, where the conflict resolution policy is set in the registry, seen as part of the entire profile).

Regarding **claim 10**, Alam et al. and Huang et al. teach the system as defined in claim 1, and Alam et al. further discloses wherein the services further comprises one or more of: an item ID matching service, wherein second item IDs of the second replica are provided by the particular adapter during a receive sync and first item IDs of the first replica are provided by the sync runtime module during a send sync (column 11, lines 6-21, where the handles include an ID number, which is used during synchronization); a sync interruptability service that includes exceptions in a remote knowledge (column 19, lines 48-64, where the exclusion list contains objects not to be synchronized); and a service that prevents changes from reflecting to and from the first replica (column 17, lines 1-20, where the system can monitor changes in the remote device and prevent synchronization loops).

Regarding **claims 11 and 12**, Alam et al. and Huang et al. teach the system as defined in claim 1 or claim 11, and Alam et al. further discloses, wherein the services further comprises a sync metadata management service that stores a remote knowledge, as required by claim 11, or a local knowledge, as required by claim 12, for the particular adapter (column 11, lines 44-61, where the sync manager obtains two list

of handles, one is a remote knowledge provided to it by the providers regarding the current state of the objects, and the other is a local knowledge gathered from the reference store pertaining to the objects' last synchronization, where metadata is interpreted as data pertaining to synchronization information).

Regarding **claims 13 and 23**, Alam et al. anticipates a method, as required by claim 13, and a computer program product for implementing a method for synchronizing a replica with one or more back end replicas, the computer program product comprising: a computer-readable storage media storing computer executable instructions for performing the method, the method comprising, as required by claim 23 (column 4, lines 28-36): for synchronizing a replica with one or more back end replicas (Abstract), the method comprising: initiating a particular adapter using one or more parameters included in a sync profile (Figure 7A, where sync initiation is performed by retrieving handles in section 162, the handles seen here as being a part of a large profile since they include sync information and parameters as seen in column 11, lines 14-37. The adaptors are seen as providers that adapt each type of file to the other device, as seen in column 10, lines 57-62 and the handles correspond to the particular adaptors as seen in column 11, lines 44-61. To explain, handles, seen as part of a profile including parameters, are used to retrieve information regarding synchronization, and synchronization is performed via providers, seen as adapters, since they adapt and interface with each object store type in order for the synchronization manager to use the stores), wherein the particular adapter uses the one or more parameters to synchronize



a first replica with a second replica (column 11, lines 62-65, and column 13, lines 6-17, with synchronization being performed from information retrieved from the adaptors, or providers); receiving a request from the particular adapter to enumerate changes on the first replica by comparing a first knowledge of the first replica with a second knowledge of the second replica (column 11, lines 44-61, with list being created to compare changes made to handles on both replicas); and detecting conflicts by determining whether a change enumerated by the first replica is included in the second knowledge of the second replica and whether the change at the second replica is included in the first knowledge of the first replica (column 13, lines 6-19, with knowledge of the devices' information being used to compare changes); and sending changes enumerated at the first replica to the second replica (column 13, lines 9-17, with the updating of the replicas on either device). Alam et al. does not disclose having the change enumeration service compare a first knowledge of the first replica with a second knowledge of the second replica to enumerate changes, wherein the knowledge of a replica comprises information describing a set of changes that the given replica is aware of. The general concept of having change enumeration occur using information describing a set of changes the replica is aware of is well known in the art as illustrated by Huang et al. Huang et al. teaches synchronization that uses update history information from the replica itself, seen as the replica knowing its changes to enumerate the differences for synchronization (column 14, lines 23-31). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Alam et al. with using the replica's own knowledge of changes to enumerate differences for synchronization as taught by Huang

et al. in order to expedite synchronization as noted in Huang et al.'s disclosure in column 14, lines 23-31.

Regarding **claims 14 and 24**, Alam et al. and Huang et al. teach the method as defined in claim 13 or the computer program product as described in claim 23, with Alam et al. further teaching wherein initiating the particular adapter using the one or more parameters included in a sync profile further comprises defining the sync profile (column 11, lines 4-17, with the handles being defined after every sync, thereby always creating a profile to work off of during future synchronizations).

Regarding **claims 15 and 25**, Alam et al. and Huang et al. teach the method as defined in claim 14 or the computer program product as described in claim 24, with Alam et al. further teaching, wherein defining the sync profile further comprises one or more of (a profile is interpreted here as being information that pertains to the synchronization of a replica): specifying a sync direction (column 13, lines 18-28, with conflict policy determined by the profile, and the policy can specify sync direction in the event of a conflict); identifying the particular adapter (column 13, lines 57-63, with the user placing an object to be synchronized in the file object store, which is a provider, seen as a particular adapter, and the provider maintains the handles as seen in column 10, lines 57-59, the handles being a part of the sync profile); identifying a first source folder and a first destination folder on the first replica; identifying a second source folder and a second destination folder on the second replica (column 11, lines 18-20, with path names being stored for replicas); and including a conflict policy (column 13, lines 19-28,

where the conflict resolution policy is set in the registry, seen as part of the entire profile).

Regarding **claims 16 and 26**, Alam et al. and Huang et al. teach the method as defined in claim 13 or the computer program product as described in claim 23, with Alam et al. further teaching, wherein receiving the request from the particular adapter to enumerate changes on the first replica by comparing the knowledge of the first replica with the knowledge of the second replica further comprises receiving the request for a service provided by a sync runtime (column 9, lines 56-67, where the synchronization manager is coupled to sync providers, seen as adaptors since they interface with certain types of file stores, and the synchronization manager provides services to the providers as described in column 10, lines 25-30, thus a request made from the adaptor is a request for a service provided by a sync runtime, the sync runtime being the synchronization manager).

Regarding **claims 17 and 27**, Alam et al. and Huang et al. teach the method as defined in claim 16 or the computer program product as described in claim 26, with Alam et al. further teaching, wherein receiving the request for a service provided by the sync runtime further comprises providing the requested service (column 10, lines 25-30, where the synchronization manager provides the providers with methods to notify the manager regarding changes to an object store, thus the change enumeration service is provided).

Regarding **claims 18 and 28**, Alam et al. and Huang et al. teach the method as defined in claim 17 or the computer program product as described in claim 27, with

Alam et al. further teaching, wherein providing the requested service further comprises managing sync metadata by performing one or more of: storing a state of the synchronization for the particular adapter; storing local knowledge for the second replica; and storing a remote knowledge of the second replica (column 11, lines 44-61, where the sync manager obtains two list of handles, one is a remote knowledge provided to it by the providers regarding the current state of the objects, and the other is a local knowledge gathered from the reference store pertaining to the objects' last synchronization, where metadata is interpreted as data pertaining to synchronization information, and column 11, lines 6-9, where the handles are updated to maintain current synchronization information, seen as the state of the synchronization).

Regarding **claims 19 and 29**, Alam et al. and Huang et al. teach the method as defined in claim 17 or the computer program product as described in claim 27, with Alam et al. further teaching, wherein providing the requested service further comprises mapping a first item ID of the first replica with a second item ID of the second replica, wherein the particular adapter provides the second item ID of the second replica in a receive sync and wherein the sync runtime provides the second item ID of the second replica during a send sync (column 11, lines 6-21, where the handles include an ID number, which is used during synchronization).

Regarding **claims 20 and 30**, Alam et al. and Huang et al. teach the method as defined in claim 17 or the computer program product as described in claim 27, with Alam et al. further teaching, wherein providing the requested service further comprises including exceptions in a remote knowledge such that items corresponding to the

exceptions are not synchronized in future synchronizations (column 19, lines 48-64, where the exclusion list contains objects not to be synchronized).

Regarding **claims 21 and 31**, Alam et al. and Huang et al. teach the method as defined in claim 13 or the computer program product as described in claim 23, with Alam et al. further teaching, further comprising preventing a change from being reflected between the first replica and the second replica using the first knowledge of the first replica and the second knowledge of the second replica (column 17, lines 1-20, where the system can monitor changes in the remote device and prevent synchronization loops).

Regarding **claims 22 and 32**, Alam et al. and Huang et al. teach the method as defined in claim 13 or the computer program product as described in claim 23, with Alam et al. further teaching, receiving changes enumerated by the second replica (column 5, lines 19-25, with the act of updating the data so both instances are up to date must include receiving changes from replica to replica); applying changes enumerated by the second replica at the first replica (column 5, lines 19-25, with the act of updating the data so both instances are up to date must include modifying the data objects to reflect their current modification); and updating the knowledge of the first replica (column 5, lines 19-25, with the act of updating the data so both instances are up to date must include achieving a synchronized state in which both replicas are current).

***Response to Arguments***

3. Applicant's arguments with respect to claim 1-32 have been considered but are moot in view of the new ground(s) of rejection.

***Summary and Response to Arguments***

A. Applicant argues the rejection under 35 U.S.C. 102(b) under Alam et al. as the reference does not disclose the claimed limitation of using the replica's knowledge to enumerate changes for synchronization.

As to point A, the argument is moot in view of the new grounds of rejection as the claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Alam et al. in view of Huang et al. The prior art references Alam et al. and Huang et al. create a prima facie case of obviousness as the combination teaches using a replica's own knowledge for synchronization.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam S. Weintrop whose telephone number is 571-270-1604. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571-272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/631,264  
Art Unit: 2145

Page 15

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7/17/07



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